Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended) A radio-frequency imaging system for noninvasively imaging the internal structure of an object, comprising:

means for generating a first beam comprised of multiple differing simultaneous radio frequency signals, said signals having a particular wavelength, that is to be passed through said object;

means for transmitting said first beam comprised of multiple differing simultaneous radio frequency signals toward said object, said means for transmitting said first beam disposed at a first side of the object;

means for receiving non-reflected portions of said first beam after said non-reflected portions have passed through said object;

means for generating one or more images of at least a portion of said object's internal structure based on received non-reflected portions of said first beam; and

means for displaying said one or more images.

Claim 2 (presently presented) The radio-frequency imaging system of claim 1 wherein said radio frequency signals are provided as a train of pulses.

Claim 3 (presently presented) The radio-frequency imaging system of claim 1 wherein said radio frequency signals are provided as a continuous wave.

Claim 4 (currently amended) The radio-frequency imaging system of claim 1 further comprising means for transmitting an additional beam towards said object in a non-parallel crossed travel path with respect to a travel path of the first beam and at the same time

said first beam is transmitted and means for receiving a non-reflected portion of said additional beam after said non-reflected portion of said additional beam has passed through said object;

wherein said ~~means for transmitting an~~ additional beam traveling in a non-parallel crossed travel path with respect to the travel path of the first beam ~~situated proximate said object~~ in order to obtain localized RF energy cross-beam information.

Claim 5 (currently amended) The radio-frequency imaging system of claim 4 wherein said additional beam is comprised of radio frequency signals transmitted at a different frequency and at a same time than a transmission frequency of the radio frequency signals of said first beam.

Claim 6 (currently amended) The radio-frequency imaging system of claim 1 further including scanning means physically connected to said first beam transmitting means and said first beam receiving means for moving one or both in a linear orientation proximate said object in order to measure said first beam's attenuation and to create an X-Y planar scan of said object representing a spatial position of said first beam through said object.

Claim 7 (currently amended) The radio-frequency imaging system of claim 1 further including scanning means physically connected to said first beam transmitting means and said first beam receiving means for moving one or both in a rotational orientation about said object, and for moving one or both along said object, in order to measure said first beam's attenuation as a function of axial position and azimuth angle and to create a three-dimensional cylindrical tomographical scan of said object representing attenuation of the first beam as a function of a spatial position of said first beam through said object.

Claim 8 (original) The radio-frequency imaging system of claim 1 wherein said signal transmitting means is a parabolic reflector

antenna.

Claim 9 (original) The radio-frequency imaging system of claim 1 wherein said signal transmitting means is a cassegrain antenna.

Claim 10 (original) The radio-frequency imaging system of claim 1 wherein said signal transmitting means is a horn antenna.

Claim 11 (original) The radio-frequency imaging system of claim 1 wherein said signal transmitting means is a waveguide having a small aperture.

Claim 12 (currently amended) The radio-frequency imaging system of claim 1 wherein said first beam has a width greater than the wavelength of said radio frequency signals.

Claim 13 (original) The radio-frequency imaging system of claim 1 wherein said signal beam is comprised of spherical wavefronts.

Claim 14 (currently amended) The radio-frequency imaging system of claim 1 wherein said first beam receiving means are situated within a travel path for the non-reflected portion of the beam, said beam receiving means for measuring a ratio of received signal power of the non-reflected portion passed through the object to transmitted signal power.

Claim 15 (previously presented) The radio-frequency imaging system of claim 5 wherein said beam receiving means are situated within a travel path for the non-reflected portion of the beam, said beam receiving means for measuring a ratio of received signal power to transmitted signal power.

Claim 16 (currently amended) The radio-frequency imaging system of claim 1 further comprising one or more auxiliary detectors for receiving deflected portions of the first beam, said one or more auxiliary detectors in communication with said means for generating said images, said auxiliary detectors situated at predetermined angles in relation to the path of said beam in order

to gather additional information regarding RF energy scattered out of said beam.

Claim 17 (previously presented) The radio-frequency imaging system of claim 5 further comprising one or more auxiliary detectors for receiving deflected portions of the beam, said one or more auxiliary detectors in communication with said means for generating said images, said auxiliary detectors situated at predetermined angles in relation to the path of said beams in order to gather additional information about RF energy scattered out of said beams.

Claim 18 (currently amended) The radio-frequency imaging system of claim 17 wherein said one or more auxiliary detectors are sensitive to a different frequency caused by interaction of said beams with the internal structure or organs of said object.

Claim 19 (original) The radio-frequency imaging system of claim 18 wherein said object is a live human or animal and said interaction of said beams produces a therapeutic effect.

Claim 20 (currently amended) The radio-frequency imaging system of claim 14 wherein said first beam receiving means further comprises an effective detector aperture less than or equal to one wavelength of the transmitted and received radio frequency signals.

Claim 21 (currently amended) An ~~security~~ imaging system for noninvasively scanning people or objects comprising:

means for generating a first beam comprised of radio frequency signals of at least one frequency, said signals having a particular wavelength with at least a portion of the signals passing through said person or said object;

first means for transmitting said first beam toward said person or said object;

first means for receiving the portion of the signals of said first beam that are passed through said person or said object;

scanning means for moving said first means for transmitting and said first means for receiving with respect to the position;

means for generating a second beam comprised of radio frequency signals of at least one frequency, said signals having a particular wavelength with at least a portion of the signals passing through said person or said object;

second means for transmitting said second beam toward said person or said object simultaneous with the transmission of said first beam and in a non-parallel travel path with respect to a travel path of said first beam;

second means for receiving the portion of the signals of said second beam that are passed through said person or said object;

scanning means for moving said second means for transmitting and said second means for receiving with respect to the position;

means for generating one or more images of at least a portion of said person or said object's internal structure based on the portion of the signals received by said first and second means for receiving; and

means for displaying said one or more images.

Claim 22 (currently amended) A method of noninvasively imaging the internal structure of an object, person or animal, said method comprising the steps of:

generating a first beam comprised of radio frequency signals with at least a portion of the radio frequency signals to be passed through said object;

transmitting said first beam toward said object;

receiving a non-deflected portion of said first beam after the non-deflected portion of said beam has passed through said object;

generating a second beam comprised of radio frequency signals with at least a portion of the radio frequency signals to be passed through said object;

transmitting said second beam toward said object simultaneous with the transmission of said first beam and in a non-parallel travel path with respect to a travel path of said first beam;

receiving a non-deflected portion of said second beam after the non-deflected portion of said second beam has passed through said object;

generating one or more images of at least a portion of said object's internal structure; and

displaying said one or more images.

Claim 23 (previously presented) The method of claim 22 wherein said radio frequency signals are provided as a train of pulses.

Claim 24 (previously presented) The method of claim 22 wherein said radio frequency signals are provided as a continuous wave.

Claim 25 (canceled)

Claim 26 (currently amended) The method of claim 22~~25~~ wherein ~~said additional beam is comprised of~~ the radio frequency signals of said second beam are transmitted at a different frequency than a transmission frequency of the radio frequency signals of said first beam.

Claim 27 (previously presented) The method of claim 22 further including the steps of measuring said beam's attenuation and creating an X-Y planar or planar tomographic scan of said object representing a spatial position of said beam through said object.

Claim 28 (previously presented) The method of claim 22 further including the steps of measuring said beam's attenuation to create an attenuation map, creating a three-dimensional cylindrical tomographical scan of said object representing a spatial position of said beam through said object, and processing the attenuation map to yield an image of internal organs or structures of the object.

Claim 29 (previously presented) The method of claim 22 further

comprising the step of measuring a ratio of received signal power of the non-reflected portion passed through the object to transmitted signal power, said step of measuring performed by said beam receiving means situated within a travel path for the non-reflected portion of said beam.

Claim 30 (previously presented) The method of claim 26 further comprising the step of measuring a ratio of received signal power of the non-reflected portion passed through the object to transmitted signal power, said step of measuring performed by said beam receiving means situated within a travel path for the non-reflected portion of said beam.

Claim 31 (previously presented) The method of claim 22 further comprising the step of gathering additional information regarding RF energy scattered out from a deflected portion of said beam, said step of gathering accomplished via one or more auxiliary detectors situated at predetermined angles in relation to the path of said beam.

Claim 32 (previously presented) The method of claim 26 further comprising the step of gathering additional information about RF energy scattered out from a deflection portion of said beams, said step of gathering accomplished via one or more auxiliary detectors situated at predetermined angles in relation to the path of said beams.

Claim 33 (currently amended) The method of claim 32 wherein said one or more auxiliary detectors are sensitive to a <u>different</u> frequency caused by interaction of said beams with the internal structure or organs of said object.

Claim 34 (original) The method of claim 33 wherein said object is a live human or animal and said interaction of said beams produces a therapeutic effect.

Claim 35 (original) The method of claim 29 further comprising

the step of providing a detector with an effective aperture less than or equal to one wavelength of the transmitted and received radio frequency signals.

Claim 36 (currently amended) A system for noninvasively affecting, processing or interacting with internal structures, subsystems and/or components of an industrial object or system comprising:

means for simultaneously transmitting a plurality of crossed ~~one or more~~ beams of radio frequency energy wherein each of said ~~one or more~~ plurality of crossed beams is transmitted at a different frequency than the other beams of said one or more beams, wherein a non-reflected portion of each transmitted beam ~~of said one or more beams~~ is passed through the object or the system such that the radio frequency energies are delivered to a volume of intersection of said beams, and wherein combinations of said frequencies interact specifically with said internal structures, said subsystems and/or said components to create a desired effect.

Claim 37 (currently amended) The imaging system of claim 1 further comprising computer means for comparing said generated images of said object with generic raw output ~~images~~ of said object, said generic raw output ~~images~~ of said object stored in a computer storage medium, said means for comparing to determine if said object is missing components, and if said object is a human or animal, to determine if said object is missing an internal organ or has broken or damaged an internal organ, said computer means capable of correcting said generated image to more closely match said stored raw output ~~actual image~~.

Claim 38 (currently amended) The method of claim 22 further comprising the step of comparing said generated images of said object with raw output ~~actual images~~ of said object, said raw output ~~actual images~~ of said object stored in a computer storage

medium, said step of comparing to determine if said object is missing components, and if said object is a human or animal, determining if said object is missing an internal organ or has broken an internal organ, said computer means capable of correcting said generated image to more closely match said stored raw output ~~actual images~~.

Claim 39 (original) The imaging system of claim 37 further comprising software instructions stored in said computer storage medium, said software instructions to compensate for diffraction effects from the object.